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|  | |  | | --- | | http://www.lenntech.com/images/yla1.gif | | ***http://www.lenntech.com/images/lenntdoorz2.gif WHO's drinking water standards 1993*** | | http://www.lenntech.com/images/ala1.gif | | 窗体顶端    **Search :**  窗体底端 |

**WHO's Guidelines for Drinking-water Quality, set up in Geneva, 1993, are the international reference point for standard setting and drinking-water safety.**

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| **Element/ substance** | **Symbol/ formula** | **Normally found in fresh water/surface water/ground water** | **Health based guideline by the WHO** |
| [**Aluminium**](http://www.lenntech.com/Periodic-chart-elements/Al-en.htm) | Al |  | 0,2 mg/l |
| Ammonia | NH4 | < 0,2 mg/l (up to 0,3 mg/l in anaerobic waters) | No guideline |
| [**Antimony**](http://www.lenntech.com/Periodic-chart-elements/Sb-en.htm) | Sb | < 4 μg/l | 0.005 mg/l |
| [**Arsenic**](http://www.lenntech.com/Periodic-chart-elements/As-en.htm) | As |  | 0,01 mg/l |
| Asbestos |  |  | No guideline |
| [**Barium**](http://www.lenntech.com/Periodic-chart-elements/Ba-en.htm) | Ba |  | 0,3 mg/l |
| [**Berillium**](http://www.lenntech.com/Periodic-chart-elements/Be-en.htm) | Be | < 1 μg/l | No guideline |
| [**Boron**](http://www.lenntech.com/Periodic-chart-elements/B-en.htm) | B | < 1 mg/l | 0,3 mg/l |
| [**Cadmium**](http://www.lenntech.com/Periodic-chart-elements/Cd-en.htm) | Cd | < 1 μg/l | 0,003 mg/l |
| [**Chloride**](http://www.lenntech.com/Periodic-chart-elements/Cl-en.htm) | Cl |  | 250 mg/l |
| [**Chromium**](http://www.lenntech.com/Periodic-chart-elements/Cr-en.htm) | Cr+3, Cr+6 | < 2 μg/l | 0,05 mg/l |
| Colour |  |  | Not mentioned |
| [**Copper**](http://www.lenntech.com/Periodic-chart-elements/Co-en.htm) | Cu |  | 2 mg/l |
| Cyanide | CN- |  | 0,07 mg/l |
| Dissolved [**oxygen**](http://www.lenntech.com/Periodic-chart-elements/O-en.htm) | O2 |  | No guideline |
| [**Fluoride**](http://www.lenntech.com/Periodic-chart-elements/F-en.htm) | F | < 1,5 mg/l (up to 10) | 1,5 mg/l |
| [**Hardness**](http://www.lenntech.com/softening.htm) | mg/l **[Ca](http://www.lenntech.com/Periodic-chart-elements/Ca-en.htm)**CO3 |  | No guideline |
| Hydrogen sulfide | H2S |  | No guideline |
| [**Iron**](http://www.lenntech.com/Periodic-chart-elements/Fe-en.htm) | Fe | 0,5 - 50 mg/l | No guideline |
| [**Lead**](http://www.lenntech.com/Periodic-chart-elements/Pb-en.htm) | Pb |  | 0,01 mg/l |
| [**Manganese**](http://www.lenntech.com/Periodic-chart-elements/Mn-en.htm) | Mn |  | 0,5 mg/l |
| [**Mercury**](http://www.lenntech.com/Periodic-chart-elements/Hg-en.htm) | Hg | < 0,5 μg/l | 0,001 mg/l |
| [**Molybdenum**](http://www.lenntech.com/Periodic-chart-elements/Mo-en.htm) | Mb | < 0,01 mg/l | 0,07 mg/l |
| [**Nickel**](http://www.lenntech.com/Periodic-chart-elements/Ni-en.htm) | Ni | < 0,02 mg/l | 0,02 mg/l |
| [**Nitrate and nitrite**](http://www.lenntech.com/Periodic-chart-elements/N-en.htm) | NO3, NO2 |  | 50 mg/l total nitrogen |
| Turbidity |  |  | Not mentioned |
| [**pH**](http://www.lenntech.com/pH-and-alkalinity.htm) |  |  | No guideline |
| [**Selenium**](http://www.lenntech.com/Periodic-chart-elements/Se-en.htm) | Se | < < 0,01 mg/l | 0,01 mg/l |
| [**Silver**](http://www.lenntech.com/Periodic-chart-elements/Ag-en.htm) | Ag | 5 – 50 μg/l | No guideline |
| [**Sodium**](http://www.lenntech.com/Periodic-chart-elements/Na-en.htm) | Na | < 20 mg/l | 200 mg/l |
| [**Sulfate**](http://www.lenntech.com/sulfates.htm) | SO4 |  | 500 mg/l |
| [**Inorganic tin**](http://www.lenntech.com/Periodic-chart-elements/Sn-en.htm) | Sn |  | No guideline |
| TDS |  |  | No guideline |
| [**Uranium**](http://www.lenntech.com/Periodic-chart-elements/U-en.htm) | U |  | 1,4 mg/l |
| [**Zinc**](http://www.lenntech.com/Periodic-chart-elements/Zn-en.htm) | Zn |  | 3 mg/l |

**Organic compounds**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Group** | **Substance** | | | **Formula** | **Health based guideline by the WHO** |
| Chlorinated alkanes | Carbon tetrachloride | | | C Cl4 | 2 μg/l |
| Dichloromethane | | | C H2 Cl2 | 20 μg/l |
| 1,1-Dichloroethane | | | C2 H4 Cl2 | No guideline |
| 1,2-Dichloroethane | | | Cl CH2 CH2 Cl | 30 μg/l |
| 1,1,1-Trichloroethane | | | CH3 C Cl3 | 2000 μg/l |
| Chlorinated ethenes | 1,1-Dichloroethene | | | C2 H2 Cl2 | 30 μg/l |
| 1,2-Dichloroethene | | | C2 H2 Cl2 | 50 μg/l |
| Trichloroethene | | | C2 H Cl3 | 70 μg/l |
| Tetrachloroethene | | | C2 Cl4 | 40 μg/l |
| Aromatic hydrocarbons | Benzene | | | C6 H6 | 10 μg/l |
| Toluene | | | C7 H8 | 700 μg/l |
| Xylenes | | | C8 H10 | 500 μg/l |
| Ethylbenzene | | | C8 H10 | 300 μg/l |
| Styrene | | | C8 H8 | 20 μg/l |
| Polynuclear Aromatic Hydrocarbons (PAHs) | | | C2 H3 N1 O5 P1 3 | 0.7 μg/l |
| Chlorinated benzenes | Monochlorobenzene (MCB) | | | C6 H5 Cl | 300 μg/l |
| Dichlorobenzenes (DCBs) | | 1,2-Dichlorobenzene (1,2-DCB) | C6 H4 Cl2 | 1000 μg/l |
| 1,3-Dichlorobenzene (1,3-DCB) | C6 H4 Cl2 | No guideline |
| 1,4-Dichlorobenzene (1,4-DCB) | C6 H4 Cl2 | 300 μg/l |
| Trichlorobenzenes (TCBs) | | | C6 H3 Cl3 | 20 μg/l |
| Miscellaneous organic constituents | Di(2-ethylhexyl)adipate (DEHA) | | | C22 H42 O4 | 80 μg/l |
| Di(2-ethylhexyl)phthalate (DEHP) | | | C24 H38 O4 | 8 μg/l |
| Acrylamide | | | C3 H5 N O | 0.5 μg/l |
| Epichlorohydrin (ECH) | | | C3 H5 Cl O | 0.4 μg/l |
| Hexachlorobutadiene (HCBD) | | | C4 Cl6 | 0.6 μg/l |
| Ethylenediaminetetraacetic acid (EDTA) | | | C10 H12 N2 O8 | 200 μg/l |
| Nitrilotriacetic acid (NTA) | | | N(CH2COOH)3 | 200 μg/l |
| Organotins | Dialkyltins | | R2 Sn X2 | No guideline |
| Tributil oxide (TBTO) | | C24 H54 O Sn2 | 2 μg/l |
|  |  |  |  |  |  |

**Pesticides**

|  |  |  |  |
| --- | --- | --- | --- |
| **Substance** | | **Formula** | **Health based guideline by the WHO** |
| Alachlor | | C14 H20 Cl N O2 | 20 μg/l |
| Aldicarb | | C7 H14 N2 O4 S | 10 μg/l |
| Aldrin and dieldrin | | C12 H8 Cl6/  C12 H8 Cl6 O | 0.03 μg/l |
| [**Atrazine**](http://www.lenntech.com/ro/atrazine.htm) | | C8 H14 Cl N5 | 2 μg/l |
| Bentazone | | C10 H12 N2 O3 S | 30 μg/l |
| Carbofuran | | C12 H15 N O3 | 5 μg/l |
| Chlordane | | C10 H6 Cl8 | 0.2 μg/l |
| Chlorotoluron | | C10 H13 Cl N2 O | 30 μg/l |
| DDT | | C14 H9 Cl5 | 2 μg/l |
| 1,2-Dibromo-3-chloropropane | | C3 H5 Br2 Cl | 1 μg/l |
| 2,4-Dichlorophenoxyacetic acid (2,4-D) | | C8 H6 Cl2 O3 | 30 μg/l |
| 1,2-Dichloropropane | | C3 H6 Cl2 | No guideline |
| 1,3-Dichloropropane | | C3 H6 Cl2 | 20 μg/l |
| 1,3-Dichloropropene | | CH3 CHClCH2 Cl | No guideline |
| Ethylene dibromide (EDB) | | Br CH2 CH2 Br | No guideline |
| Heptachlor and heptachlor epoxide | | C10 H5 Cl7 | 0.03 μg/l |
| Hexachlorobenzene (HCB) | | C10 H5 Cl7 O | 1 μg/l |
| Isoproturon | | C12 H18 N2 O | 9 μg/l |
| Lindane | | C6 H6 Cl6 | 2 μg/l |
| MCPA | | C9 H9 Cl O3 | 2 μg/l |
| Methoxychlor | | (C6H4OCH3)2CHCCl3 | 20 μg/l |
| Metolachlor | | C15 H22 Cl N O2 | 10 μg/l |
| Molinate | | C9 H17 N O S | 6 μg/l |
| Pendimethalin | | C13 H19 O4 N3 | 20 μg/l |
| Pentachlorophenol (PCP) | | C6 H Cl5 O | 9 μg/l |
| Permethrin | | C21 H20 Cl2 O3 | 20 μg/l |
| Propanil | | C9 H9 Cl2 N O | 20 μg/l |
| Pyridate | | C19H23ClN2O2S | 100 μg/l |
| Simazine | | C7 H12 Cl N5 | 2 μg/l |
| Trifluralin | | C13 H16 F3 N3 O4 | 20 μg/l |
| Chlorophenoxy herbicides (excluding 2,4-D and MCPA) | 2,4-DB | C10 H10 Cl2 O3 | 90 μg/l |
| Dichlorprop | C9 H8 Cl2 03 | 100 μg/l |
| Fenoprop | C9H7Cl3O3 | 9 μg/l |
| MCPB | C11 H13 Cl O3 | No guideline |
| Mecoprop | C10H11ClO3 | 10 μg/l |
| 2,4,5-T | C8 H5 Cl3 O3 | 9 μg/l |

**Disinfectants and disinfectant by-products**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Group** | **Substance** | | | | **Formula** | **Health based guideline by the WHO** |
| Disinfectants | Chloramines | | | | NHnCl(3-n),where n = 0, 1 or 2 | 3 mg/l |
| Chlorine | | | | Cl2 | 5 mg/l |
| [**Chlorine dioxide**](http://www.lenntech.com/chlorine_dioxide.htm) | | | | ClO2 | No guideline |
| Iodine | | | | I2 | No guideline |
| Disinfectant by-products | Bromate | | | | Br O3- | 25 μg/l |
| Chlorate | | | | Cl O3- | No guideline |
| Chlorite | | | | Cl O2- | 200 μg/l |
| Chlorophenols | 2-Chlorophenol (2-CP) | | | C6 H5 Cl O | No guideline |
| 2,4-Dichlorophenol (2,4-DCP) | | | C6 H4 Cl2 O | No guideline |
| 2,4,6-Trichlorophenol (2,4,6-TCP) | | | C6 H3 Cl3 O | 200 μg/l |
| Formaldehyde | | | | HCHO | 900 μg/l |
| MX (3-Chloro-4-dichloromethyl-5-hydroxy-2(5H)-furanone) | | | | C5 H3 Cl3 O3 | No guideline |
| Trihalomethanes | | Bromoform | | C H Br3 | 100 μg/l |
| Dibromochloromethane | | CH Br2 Cl | 100 μg/l |
| Bromodichloromethane | | CH Br Cl2 | 60 μg/l |
| Chloroform | | CH Cl3 | 200 μg/l |
| Chlorinated acetic acids | | | Monochloroacetic acid | C2 H3 Cl O2 | No guideline |
| Dichloroacetic acid | C2 H2 Cl2 O2 | 50 μg/l |
| Trichloroacetic acid | C2 H Cl3 O2 | 100 μg/l |
| Chloral hydrate (trichloroacetaldehyde) | | | | C Cl3 CH(OH)2 | 10 μg/l |
| Chloroacetones | | | | C3 H5 O Cl | No guideline |
| Halogenated acetonitriles | | | Dichloroacetonitrile | C2 H Cl2 N | 90 μg/l |
| Dibromoacetonitrile | C2 H Br2 N | 100 μg/l |
| Bromochloroacetonitrile | CH Cl2 CN | No guideline |
| Trichloroacetonitrile | C2 Cl3 N | 1 μg/l |
| Cyanogen chloride | | | | Cl CN | 70 μg/l |
| Chloropicrin | | | | C Cl3 NO2 | No guideline |

Click here for a [**comparative table of the WHO/EU water standards**](http://www.lenntech.com/WHO-EU-water-standards.htm).

Check here the newer [**WHO Guidelines for Drinking-water Quality 2006**](http://www.lenntech.com/WHO's-drinking-water-standards06.htm).

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